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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/061,577	01/31/2002	Roland Green	700706.90068	9636

7590

03/02/2005

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EXAMINER

FORMAN, BETTY J

ART UNIT

PAPER NUMBER

1634

DATE MAILED: 03/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

4/12

Office Action Summary	Application No.		Applicant(s)	
	10/061,577		GREEN ET AL.	
	Examiner		Art Unit	
	BJ Forman		1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 6-9 is/are pending in the application.
- 4a) Of the above claim(s) 7 and 8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 6 and 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7 December 2004 has been entered.

Status of the Claims

2. This action is in response to papers filed 7 December 2004 in which claims 1 and 9 were amended and claim 2 was canceled. All of the amendments have been thoroughly reviewed and entered.

The previous rejections in the Office Action dated 7 June 2004 are withdrawn in view of the amendments. Applicant's arguments have been thoroughly reviewed but are deemed moot in view of the amendments, withdrawn rejections and new grounds for rejection. New grounds for rejection are discussed.

Claims 1, 6 and 9 are under prosecution.

Claim Objections

3. Claim 9 is objected to because of the following informalities: The claim has been incorrectly amended in the last line to delete "position" before "is equivalent".

Appropriate correction is required.

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Claim Rejections - 35 USC § 112

35 U.S.C. 112: First paragraph

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1 and 6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The recitation “shutting off light to the first synthesis period” is added to the newly amended independent claim 1 from which claim 6 depends. However, the specification fails to define or provide any disclosure to support such claim recitation. The specification (§ 14, 24 , 25) repeatedly describes turning off mirrors to redirect light and reduce light intensity at the synthesis positions. However, the specification does not teach or describe shutting off light as newly claimed. Therefore, the amendment introduces new matter.

MPEP 2163.06 notes “If NEW MATTER IS ADDED TO THE CLAIMS, THE EXAMINER SHOULD REJECT THE CLAIMS UNDER 35 U.S.C. 112, FIRST PARAGRAPH - WRITTEN DESCRIPTION REQUIREMENT. *IN RE RASMUSSEN*, 650 F.2d 1212, 211 USPQ 323 (CCPA 1981).” MPEP 2163.02 teaches that “Whenever the issue arises, the fundamental factual inquiry is whether a claim defines an invention that is clearly conveyed to those skilled in the art at the time the application was filed...If a claim is amended to include subject matter, limitations, or terminology not present in the application as filed, involving a departure from, addition to, or deletion from the disclosure of the application as filed, the examiner should conclude that the claimed subject matter is not described in that application.” MPEP 2163.06 further notes “WHEN AN AMENDMENT IS FILED IN REPLY TO AN OBJECTION OR REJECTION BASED ON 35 U.S.C. 112, FIRST PARAGRAPH, A STUDY OF THE ENTIRE APPLICATION IS OFTEN NECESSARY TO DETERMINE WHETHER OR NOT “NEW MATTER” IS INVOLVED. APPLICANT SHOULD THEREFORE SPECIFICALLY POINT OUT THE SUPPORT FOR ANY AMENDMENTS MADE TO THE DISCLOSURE” (emphasis added).

35 U.S.C. 112: Second paragraph

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 6 are indefinite in Claim 1, next to last line, for the recitation "the first synthesis period" because the recitation lacks proper antecedent basis in the "first synthesis position" recited throughout the claim.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Garner (U.S. Patent No. 6,295,153, filed 4 June 1999), Baker et al (U.S. Patent No. 6,262,795, filed 28 August 1998) and Sweatt et al (U.S. Patent No. 5,870,176, issued 9 February 1999).

Regarding Claims 1, 6 and 9, Garner teaches a method of synthesizing an array of oligomer comprising illuminating synthesis areas using light directed to the areas by a micromirror array to photolithographic synthesis of the oligomers (Column 4, lines 36-65 and

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Column 5, lines 37-50). Garner further teaches illumination during a protection group deprotection whereby light directed to an area deprotects (removes) protecting groups wherein it is further taught that deprotection, a critical step in the synthesis, is dependent upon exposure time and illumination intensity (Column 7, lines 46-51 and Column 8, line 56-Column 9, line 9). Garner also teaches that light is redirected or deflected by the micromirror array and their method utilizes a shutter for decreasing the amount of light striking the mirror (Column 4, lines 43-46 and 54-60). This clearly suggests the light to and from the micromirror is adjusted during use. Sweatt et al teach a similar microarray mirror and method of photolithography wherein the micromirrors are individually controlled to redirect light from the mirror by putting a selected mirror in the "off position" thereby reducing the amount of time light is delivered to the surface (Column 3, lines 10-28).

Garner does not teach that the illuminations is evaluated mathematically and adjusted to correct non-uniformity across the area.

Baker et al teach a method of quality control for photolithography comprising measuring illumination intensity of at least two different positions in the illumination area, evaluating mathematically the a difference in illumination intensity and adjusting the illumination intensity of light directed to a brighter position to match that of a less bright position (Column 6, lines 11-25 and Column 7, line 35-Column 8, line 30) wherein "a variety of characteristics" are adjustable to provide the desired illumination uniformity (Column 6, lines 26-28). Baker et al further teach the need exists for obtaining and maintaining uniformity of illumination intensity during photolithography because non-uniformity results in non-uniform synthesis (Column 2, lines 1-34).

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to combine the teachings of Garner, Baker and Sweatt to obtain the claimed invention. Garner teaches oligomer photosynthesis using micromirror illumination provides a low cost and efficient method of surface patterning without masks (Column 1, line

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64-Column 2, line 6). Sweatt et al teach adjusting illumination by turning off (thereby reducing time) the light from micromirrors going to the surface to provide desired pattern (Column 3, lines 10-28). Baker et al teach the known problem of non-uniform illumination exists and suggests various characteristics be varied to provide uniform illumination (Column 6, lines 11-25 and Column 7, line 35-Column 8, line 30). Taken together, one of ordinary skill in the art would have been motivated to measure and adjust the illumination intensity at synthesis positions and repeatedly at each position by redirecting illumination to thereby correct non-uniform illumination based on the problems associated with non-uniform illumination taught by Baker et al and for the expected benefit of providing more accurate devices (Baker et al, Column 2, lines 1-34).

Conclusion

10. No claim is allowed.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BJ Forman whose telephone number is (571) 272-0741. The examiner can normally be reached on 6:00 TO 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Jones can be reached on (571) 272-0745. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

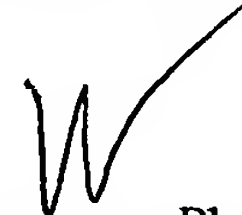
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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

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BJ Forman, Ph.D.
Primary Examiner
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March 1, 2005